Communicating Seismic Risk Information with Tenants

Guide for engaging with commercial tenants about seismic building risk

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In this guide

- Key principles for effective risk communication
- Tips for holding conversations about seismic building risk
- Understanding a tenant's context
- What to consider when communicating seismic building risk information
- How to communicate different aspects of seismic building risk with tenants

When and how to use this guide

If you provide seismic building risk information to commercial building tenants, then this guide is for you.

Commercial building tenants often need to interpret seismic building risk information when making decisions about their current or future occupancy of a building. This guide provides advice, principles, and examples for how to communicate seismic building risk information in a way that tenants can readily understand and relate to. There are also some 'useful phrases' that you can use to describe key concepts to commercial building tenants.

You may find this guide particularly useful if you are a:

- Property manager
- Property agent
- Property owner with tenants
- Project manager
- Structural engineer

Key principles for effective risk communication

Use different methods

Use a range of methods to communicate seismic risk information, such as text, charts, diagrams, and/or conversation. It can also help to have information presented from a variety of perspectives, such as seismic building risk experts.

Organise and simplify information

Pitch your communication according to the tenant's understanding of seismic building risk, and avoid overwhelming them with complex information. Identify what they hope to gain from the information you are providing, and make sure the information is relevant to their decision-making needs.

Be clear and consistent

Be clear and consistent in your communication. Where possible, avoid complex or technical jargon. If there are special terms used in the risk information, make sure to include plain language definitions. Some phrases in the glossary of this guide may be useful (see Page 9).

Acknowledge uncertainty

If there are things you are uncertain about, make these known. Be upfront about what you don't know, and why. Explain what you are doing, or have done, to reduce any uncertainty.

Be transparent

Explain your information process. Outline how you obtained the risk information, how you have interpreted it and reached your conclusions, and the next steps forward for the tenant.

Be empathetic

Some people may have concerns or heightened perceptions of risk. This could be driven by experiences of previous events, or concerns about financial, staffing, or other implications of risk information. Acknowledgement of and empathy toward these concerns will help tenants process their emotions and interpret information.

Use reliable sources

Supporting your communication with reliable sources can strengthen your messaging and provide tenants with complementary information. This can help to build trust, especially when the information may be complex and potentially emotive, such as seismic building risk information. The MBIE Seismic Risk Series has some great resources to help (see Page 8).

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Holding a conversation about seismic building risk

Good communication is a multi-step, two-way process that should be tailored to each tenant. It takes time to plan how best to communicate seismic risk information, to discuss the information with the tenant, and to follow-up.

BEFORE

- When faced with decisions about risk, tenants will have many competing demands and needs that will influence their decision-making and risk tolerance in subtle ways.
- For communication to be most effective, it is vital to first understand the context of a tenant's organisation (see Page 3 for more).
- Have early discussions with tenants to understand their priorities and main concerns.
- Establish why a tenant wants particular information and what they plan to use the information for, such as making decisions about building occupancy, risk reduction options, or improving the expected seismic performance of their building(s).

DURING

- Tailor information to meet a tenant's needs and/or priorities, as appropriate.
- Speak with tenants directly. Clearly explain what the provided information does and does not answer, and why.
- Provide a clear and plain-language summary of information to tenants, free of technical or specialist jargon.
- Provide relevant context and/or additional explanation to information where necessary. Identify whether tenants would like, or would benefit from, further clarification.
- Don't just provide tenants with information of what the risk is - empower them by providing information on what action they can take to reduce risk.

AFTER

- If necessary, give tenants time to process the information. Allow time for a follow-up with the tenant.
- Offer ongoing support and communication with tenants. This can help their ongoing management of the risk and minimise the potential of them feeling overwhelmed.
- In some cases, tenants may need additional support for communicating risk with staff. Identify whether this is needed and offer options for support/advice, where possible.

Before tenants make building occupancy decisions related to seismically vulnerable buildings, always refer them to the MBIE *Seismic Risk Guidance for Buildings* (2022).

Holding a conversation about seismic building risk

Risk is not objective. The same building risk may be acceptable for one tenant organisation but unacceptable to another. This can be influenced by the importance of a tenant's building to business operations and/or continued service delivery.

Risk management decisions should be considered within the context of a tenant's usual workplace operations. Where possible, seismic building risk information should also be framed in a way that aligns to a tenant's context. For instance, are there other risks that their organisation manages, or certain risk language they use? Once you understand this context, you can frame your information to be most relevant and meaningful to a tenant.

NOTE: This guide focuses on communicating with tenants who are making decisions within the context of their workplace. However, you may also need to speak with staff, who may be more focused on what risk means to them on a personal level. Your communication style or approach should always be tailored to the audience and purpose of the conversation.

Acknowledging the impact of the Health and Safety at Work Act

When considering seismic building risk information, tenants may be driven by perceptions of obligations under the Health and Safety at Work Act 2015 (HSWA). Tenants may be searching for answers of what is and isn't "safe" in relation to the seismic risk of their building.

Emphasise that HSWA obligations aren't black and white. They require a balanced consideration of risks and potential mitigation, so far as they are "reasonably practicable". This includes considering: the **likelihood** of hazard; the **degree of harm** that may result; **knowledge of the risk; and the availability and suitability of risk** management options. After these factors have been considered, the **cost of mitigation** should also be considered (including whether the cost is grossly disproportionate to the risk).

Deciding if a certain course of action is "reasonably practicable" will depend on the specific context of a tenant's organisation. What works for some may not work for others. By understanding a tenant's context, you can develop communication that helps to frame HSWA obligations early on and possible ways to mitigate risk.

What to consider when communicating seismic risk information

Presenting consequence and likelihood

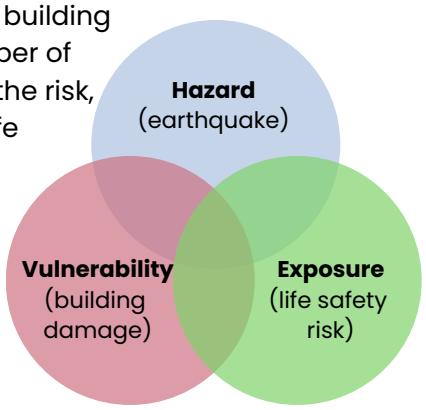
When communicating seismic building risk information, it is helpful to include likelihood alongside a range of potential consequences.

Because of the potentially significant consequences of earthquakes to people and buildings (e.g., injury, damage, disruption), it is common for people to focus more on these, while giving limited consideration to the likelihood of these consequences actually occurring. This may lead to a misunderstanding and/or misrepresentation of risk posed in the short- to medium-term. While consequences can be high, the likelihood of a damaging earthquake occuring on any given day remains very low.

When communicating likelihood with tenants, be clear about what likelihood you are referring to: hazard, vulnerability, or exposure.

Are you talking about likelihood of an earthquake occuring (hazard), of a building being damaged because an earthquake has occurred (vulnerability), or of people potentially being harmed from building damage because an earthquake has occurred (exposure)?

Remember that a building's seismic rating (%NBS rating, or percent New Building Standard) is primarily aligned with the likelihood of a hazard and vulnerability of building elements. The number of people exposed to the risk, and therefore the life safety risk, is not considered.



What to consider when communicating seismic building risk information

Communicating in numerical and descriptive language

People interpret risk differently depending on whether it is numerical or descriptive.

Numerical communications (e.g. "60% chance") are less subjective than descriptive communications (e.g. "likely"). However, descriptive communications are often perceived as being more accessible and easier to understand than numerical communications.

Some tenants may already use descriptive terms within their organisation, for example in existing risk management policies. Use existing definitions and language, where possible.

For the best impact, consider combining numerical and descriptive language when presenting risk information, where possible.

Example

"Over the course of your tenancy, the probability of an earthquake occurring that could cause damage that poses a life safety risk is less than 1% (very unlikely)".

Providing practical examples of what risk means

Risk is an abstract concept, making it difficult for some people to understand potential impacts in real terms. Be clear about what seismic building risk means to tenants in simple, practical, and relevant terms.

Providing tangible examples of potential impacts can help bring to life what the risk means for a tenant. This could include life safety impacts, as well as potential damage and/or disruption to the use of a building.

Example

"Over the course of your tenancy, there is a probability of less than 1% (very unlikely) of an earthquake occurring that may cause significant damage to your building, after which it may not be possible to continue using."

"Within the next 50 years, there is a probability of approximately 10% (unlikely) of an earthquake occurring that may cause significant damage to your building, after which it may not be possible to continue using."

Framing communications negatively or positively

Tenants' interpretations and reactions to risk messaging may be influenced by the way information is framed.

This includes whether seismic building risk information is framed negatively (focusing on the disadvantages of inaction) or positively (focusing on the advantages of action). It is useful to keep this in mind when communicating with tenants, to ensure you provide balanced messaging that does not lead tenants to a certain bias. Examples of messages framed negatively and positively are provided below.

Example

Negative framing: "*A building assessed with lower seismic performance can increase the risk of harm to users, expected damage to the building, and disruption to use of the building*".

Positive framing: "*A building assessed with greater seismic performance can reduce the risk of harm to users, expected damage to the building, and disruption to use of the building*".

Communicating risk timeframes

People perceive the urgency of risk differently depending on the timeframe presented. Risks framed over longer periods (e.g. hundreds of years) tend to be discounted, as people assume them to be of concern for the future, not now.

Where possible, translate seismic building risk into timeframes that match a tenant's context, such as calculating risk based on their lease period.

Consider communicating risk occurring "within" a certain timeframe, instead of "in", to help reduce the chance of the risk being discounted.

Holding a conversation about seismic building risk

Comparing seismic building risk with other risks

Comparing risks can be helpful for tenants to contextualise seismic building risk with other risks they may manage or encounter.

Tenants often seek risk comparison information to understand and justify decisions about their building(s) and/or to make sense of any danger and/or urgency.

While everyday risk comparisons (such as flying or driving) can be useful to get a sense of the scale of a risk, they should not be the basis for a decision. If using everyday risk comparisons, emphasise that the main purpose is to assist tenants to put the risk into perspectives of other risks within their environment.

It is useful to compare risks from activities that a tenant manages day to day, where possible.

Comparing seismic building risk with other relevant organisational risks - and in the language that a tenant organisation may already use and is familiar with - can help to frame seismic building risk in a way that tenants may understand better. This can help to prioritise mitigation, where needed.

Risk comparisons are good for setting context but should not be the only input into decision making about whether and how to manage seismic risk in a building.

When comparing seismic building risk with other risks, it is good practice to:

- **Compare relevant risks:** Compare risks that are relevant to a tenant, such as workplace risks. Ensure comparisons are relevant by asking them what other risks they manage in the workplace.
- **Use comparable metrics:** Use information and data that have comparable metrics, to avoid misleading or creating misinterpretations. For example, select a consistent value to compare, such as deaths per million or days of downtime.
- **Communicate uncertainty:** Communicate any uncertainty associated with information used in risk comparisons, including your confidence in the data used to inform any risk metrics.
- **Use multiple formats:** Present information in multiple forms as this can help tenants understand risk. This may include the use of numbers or charts alongside any explanations.
- **Go beyond life-safety risk:** The impacts of seismic events go beyond life safety risk. It can be useful to use risk comparisons with other events that could cause disruption to business operations.

Exercise caution when comparing these types of risk:

- **Involuntary and voluntary risks:** People are more willing to accept risks that are voluntary (i.e. where someone has choice and control over the risk they are taking) compared to those that are involuntary (i.e. where someone is told to do something). As a result, voluntary risks may be perceived as less risky than involuntary risks, making direct comparisons challenging.
- **Comparing context-specific risks:** Risk perceptions and tolerances will change depending on the context. The likelihood of a particular risk will also change depending on the context. Risks should be compared within a consistent context (for example within a workplace setting) or the context of different risks needs to be clear to ensure comparisons are not misleading.
- **Acceptable and unacceptable risks:** Individuals have different views about what is acceptable or not. There are some risks that are widely considered unacceptable, for example cancer rates and workplace injuries. If comparisons are made with these risks and they are not declared as unacceptable, they may be perceived as acceptable and inappropriately used to gauge the acceptability of seismic building risk.

Examples of risks you could compare with seismic building risk:

- Landslide risk *(where applicable)*
- Building fire risk
- Cyber-attack risk *(business disruption)*

Communicating different aspects of seismic risk with tenants

"What is %NBS?"

A %NBS rating is the default way many tenants, and other building users, interpret seismic building risk.

However, it is important to focus communications more broadly than just %NBS.

Emphasise the wider context of %NBS, including that it is a measure of building performance in an earthquake and was designed to help with the policy objective of identifying earthquake-prone buildings, rather than to precisely evaluate a building's life safety risk.

Useful phrases to explain %NBS include:

- While a low %NBS rating indicates a heightened life safety risk in the event an earthquake occurs, it does not mean the building is imminently dangerous. In most cases, such buildings can continue to be occupied while remediation work is planned and undertaken.*
- %NBS is a tool used to support engineering assessments, it is not a risk metric.
- Understanding the relative vulnerability of different building elements, and potential consequences of failure of these elements, is always more important than the overall %NBS rating for a building.*
- A %NBS building rating is a way to compare life safety risk of buildings, and should be viewed as indicative of an engineer's confidence in the expected seismic performance of a building, rather than an exact prediction.*
- A %NBS building rating does not indicate potential building damage and/or the inability to use a building after an earthquake.

"What does the Building Code provide?"

While the primary focus of minimium seismic design standards is life safety, many people do not fully recognise this.

It is important tenants understand that, for most buildings, minimum seismic design standards primarily aim to protect life safety, not to minimise building damage or enable continued use of a building after an earthquake.

By understanding this, tenants will be better positioned to make informed decisions that match their needs and priorities. You can help with this by framing conversations around how going "above and beyond" minimum requirements can improve the seismic resilience of tenant's buildings.

Useful phrases to explain the expected seismic performance of code minimum buildings include:

- For most buildings, the primary goal of minimum seismic design standards is to protect people in an earthquake, not to minimise damage or enable continued use of a building after an earthquake.
- Buildings designed to minimum seismic design standards may still suffer significant damage and be unusable following an earthquake, potentially to a degree that may be uneconomical to restore.
- Minimum seismic design standards do not provide for whether the contents or fitout of your building will be damaged in an earthquake.

*MBIE Seismic Risk Guidance for Buildings (2022).

For more about %NBS building ratings, refer to the MBIE *Seismic Risk Guidance for Buildings* (2022).

Communicating different aspects of seismic risk with tenants

"Can an engineer predict what will happen to my building in an earthquake?"

Tenants may seek answers for how their building will specifically perform in an earthquake.

It is important to establish clear expectations that it is not possible to predict in absolute terms how a building will perform in any given earthquake.

There is also uncertainty in predicting whether damage to the building will cause harm to people.

While this can be confronting, acknowledging uncertainty in your risk information can help tenants better understand the risk they are dealing with.

Useful phrases to explain the uncertainty in predicting seismic building performance include:

- Each earthquake is unique, and this influences how a building might react. Short, sharp earthquakes will impact stiff, low-rise buildings more significantly, while long, rolling earthquakes will impact high-rise buildings more significantly.*
- Past earthquakes demonstrate that similar buildings in close proximity can vary in seismic performance, creating significant uncertainty for predicting exactly how buildings will perform.**
- A building's response to an earthquake depends on various individual factors that interact with each other, including the type of shaking, local geological features, and the building's characertistics.*

*MBIE Seismic Risk Guidance for Buildings, 2022.

**Technical Guidelines for Engineering Assessments: Assessment Objectives and Principles (Part A), July 2017.

"Why has my building rating changed?"

Tenants may become confused and frustrated if the outcome of a seismic building assessment changes from a previous assessment.

Different outcomes between seismic assessments may even lead some tenants to lose trust in the findings and/or the engineers who provide them.

It is important to emphasise to tenants that future assessments may be needed and may produce different outcomes, and why. Proactively acknowledging the degree of subjectivity and uncertainty associated with seismic building assessments can help to mitigate this issue.

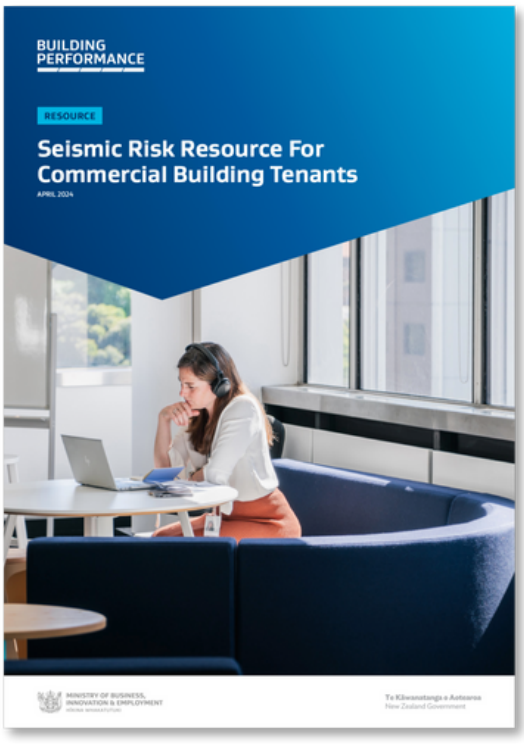
Useful phrases to explain potential changes in, and limitations of, assessment outcomes include:

- Seismic assessments involve multiple variables that have uncertainty associated with them in estimating building performance, including the unpredictable nature of earthquakes, the complex response of buildings to earthquake shaking, variability in construction quality, and insufficient construction records.*
- No person can make categorical statements about safety in an earthquake.*
- Assessments of seismic risk are not an exact science but are made using engineering judgement based on the best available information.
- Our knowledge of earthquakes, and how buildings perform in earthquakes, is continually updating and improving.
- There is always a chance that future seismic assessments may need to be completed, such as if future changes are made to minimum seismic design standards because of advancing engineering knowledge of seismic risk.

Other resources to help tenants better understand seismic building risk

Check out these resources from the MBIE Seismic Risk Series

For interpreting seismic building assessments and tips on occupying a seismically vulnerable building, see:
Seismic Risk Guidance for Buildings
(MBIE, 2022)



For understanding and managing seismic building risk as a commercial tenant, within in the context of your organisation, see:
Seismic Risk Resource for Commercial Building Tenants
(MBIE, 2024)

Reminder for Engineers

The first page of a detailed seismic assessment report is the most critical for communicating information about seismic building risk.

Not everyone will read beyond the headlines/summary of key points in a building assessment report.

It is good practice to provide a clear and concise summary of key information, free of technical or specialist jargon, and focused on what the assessment means to building users in practical terms.

Consider what information a tenant or other end user may need to understand their assessment report and make informed decisions.

For further advice on communicating seismic building assessments, check out Earthquake Ratings and Seismic Retrofit of Existing Buildings Following the Release of TS 1170.5 Advice for Engineers from the New Zealand Society for Earthquake Engineering (NZSEE).

Glossary of key seismic building risk terms

Seismic building risk often involves terms that non-experts may struggle with. To facilitate effective communication, a glossary of terms is provided below with layperson definitions.

%NBS RATING	An index used to characterise the expected seismic response of a building to earthquake shaking. It identifies buildings that represent a higher seismic risk than a similar new building, built to the minimum life safety requirements of the Building Code (or New Building Standard).
ACCELERATION	How quickly a building sways or moves during an earthquake, generating forces that can cause damage.
CONSEQUENCE	The impact(s) of something occurring, such as an earthquake causing building damage and/or harm to people.
CRITICAL STRUCTURAL WEAKNESS	A building element that has the lowest %NBS score and presents the greatest life safety risk.
DRIFT	The shift between floors as a building sways or moves during an earthquake.
EARTHQUAKE-PRONE BUILDING	A legal term to define buildings that rate less than 34%NBS and are designated as "Earthquake-prone" by a Territorial Authority under the Building (Earthquake-prone Buildings) Amendment Act 2016. Earthquake-prone buildings must be remediated or demolished within a period of 7.5 to 35 years depending on their use and location in Aotearoa NZ.
EXPOSURE	The number of people that may be affected by damage to a building and the duration they are subjected to the risk.
HAZARD	Something that can cause harm or danger, such as an earthquake.
LIKELIHOOD	The chance that something will happen within a particular period, such as an earthquake, building damage from an earthquake, or people being harmed due to building damage in an earthquake.
RISK	The likelihood of given harm or loss occurring.
SEISMIC BUILDING PERFORMANCE	How a building responds to different levels of earthquake shaking.
SEISMIC DESIGN STANDARDS	A set of rules that outline how buildings must be constructed. This includes requirements for providing a certain level of safety in an earthquake.
VULNERABILITY	The susceptibility (weakness) of a building element to failure because of earthquake shaking.

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